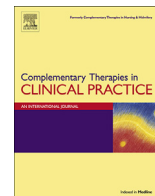




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## Complementary Therapies in Clinical Practice

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## Application of an integrative yoga therapy programme in cases of essential arterial hypertension in public healthcare

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### A B S T R A C T

#### Keywords:

Essential hypertension  
Comprehensive yoga program  
Stress coping  
Cardiovascular reactivity  
Public health

**Objective:** To examine the efficacy of an integrative yoga programme as adjuvant treatment of essential arterial hypertension.

**Methods:** An Integrative yoga programme was conducted during three months in 26 sessions with a group of ten essential arterial hypertension patients at a public health centre. The same number of patients acted as the control group without treatment. The patients were randomly selected and assigned to the groups. All patients filled in the Positive and Negative Affect Schedule (PANAS), the Hospital Anxiety and Depression Scale (HADS) and the Smith Relaxation States Inventory 3 (SRSI3) before and after the treatment.

**Results:** A statistically significant reduction of systolic and diastolic blood pressure, negative affect, symptoms of anxiety and degree of stress could be observed in the study group.

**Conclusions:** These positive and promising results confirm the effectiveness of these techniques in the treatment of essential arterial hypertension and suggest possible further investigations.

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### 1. Introduction

Arterial hypertension is a high-risk health disorder. It is responsible for roughly half of deaths due to cerebrovascular accident, thus constituting the leading cause of premature death and disability, increasing the risk of renal insufficiency, blindness, breakage of blood vessels and cognitive deterioration. It affects 40% of adults older than 25 worldwide and 36.7% in Spain [1].

The VII Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC VII) of the American National Institutes of Health (NIH), the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) agree that arterial hypertension is given with an average of two or three consecutive measurements of 140 mmHg or more systolic pressure and/or 90 mmHg or more of diastolic pressure in a seated position [2].

Essential (or primary) arterial hypertension, the cause of which cannot be determined organically, is a functional disorder which is strongly related to a person's life style. Among the risk factors which influence the development and occurrence of arterial

hypertension are excess weight, diabetes, excessive salt intake, high-fat diet, smoking, excessive alcohol intake and sedentariness; additionally, the influence of emotional risk factors such as anxiety, depression and negative affect has also been demonstrated [3–5].

A high cardiovascular response associated with stress is manifested in patients with anxiety disorders, while in relation with depressions some studies suggest deterioration in the recovery of the cardiovascular parameters of the patients, whose cardiovascular response is lower than that in healthy individuals [6].

In regard to protective factors, the beneficial action of positive affect on cardiovascular diseases [7] and the positive influence of states of relaxation on the reduction of the blood pressure in hypertension patients [8] can be highlighted.

Psychological programmes which have traditionally been applied in the treatment of essential arterial hypertension have been based on procedures of stress management built on relaxation practices, sometimes in combination with biofeedback or cognitive techniques [9].

India, which is the cradle of yoga, has an important role in research and therapeutic application of yoga in hospitals, clinics and research centres; among the most prominent of these research centres are the Vivekananda Yoga Research Institute in Bangalore (S-VYASA), the Morarji Desai National Institute of Yoga in New Delhi (MDNIY) and the Advanced Centre for Yoga Therapy, Education and Research in Pondicherry (ACYTER). The therapeutic

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